# **IUGS E-BULLETIN NO. 88 - August 2013**

# Compiled by: Prof Hassina MOURI - IUGS Councillor 2012-2016



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#### **NEWS FROM THE IUGS OFFICE**

#### **Recent Executive Committee decisions**

The Executive Committee has accepted (i) a revised application from Earth Science Matters (ESM) for Affiliate status with IUGS, and (ii) Professor Ben Mapani as the new Chair for IUGS' Commission – Geoscience for Environmental Management (GEM). Both decisions have been submitted for Council approval.

# International Council for Science (ICSU) Geounions meeting

President Roland Oberhansli and Secretary General Ian Lambert will represent IUGS at ICSU's Geounions meeting in Altanya, Turkey, from 16-18 November 2013, which will consider proposals for activities under the ICSU-led *Future Earth*, including social science components of IUGS's proposed major program, Resourcing Future Generations. *Future Earth* is a new 10-year international research initiative that will develop the knowledge for responding effectively to the risks and opportunities of global environmental change and for supporting transformation towards global sustainability in the coming decades. It will mobilize thousands of scientists while strengthening partnerships with policy-makers and other stakeholders to provide sustainability options and solutions.

# **Upcoming IUGS-sponsored events**

The program has been finalised for the 2nd G-EVER International Symposium and the 1<sup>st</sup> IUGS&SCJ International Workshop on Natural Hazards; Hazards and Risk Managements in Asia-Pacific region: volcanism, earthquakes, tsunami and landslides in subduction zones:

http://g-ever.org/en/symposium/symposium2.html)

Date: Oct. 19 (Sat) and Oct. 20 (Sun), 2013

Venue: Sendai City Information & Industrial Plaza, Sendai, Tohoku, Japan

**Organizers:** G-EVER Consortium

Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology (AIST), The International Union of Geological Sciences (IUGS) and Science Council of Japan (SCJ).

Joint hosting: The Geological Society of Japan

**Purpose:** After the 2011 Tohoku earthquake, greater efforts were made towards the prevention and reduction of the risks of natural disasters have been made all over the world. The G-EVER Consortium (G-EVER: Global Earthquake and Volcanic Eruption Risk Management, see detail http://g-ever.org/) promotes activities in collaboration with international and national institutes and organizations as follows:

- 1. Establishment of a framework for cooperation of research institutes and related organizations in the Asia-Pacific region working on seismic and volcanic disaster prevention
- 2. Enhancement of exchange and sharing of information on seismic and volcanic disaster prevention
- 3. Building the international standards for the databases, data exchange and disaster risk assessments.

The major interest of IUGS is to consider natural hazards risk reduction and reach agreement on earth science contributions that need more systematic attention, and how these can be factored into decision making.

## **Program:**

#### Oct. 19

Opening addresses:

Chair: Naoji Koizumi

9:00-9:15 Eikichi Tsukuda (Director General, GSJ, AIST, G-EVER Consortium President)

9:15-9:20 Roland Oberhaensli (IUGS President)

9:20-9:25 Ryo Matsumoto (SCJ-IUGS Japanese Branch)

#### Session 1: Scientific challenges for risk reduction of natural disasters: Overview

Chair: Ryo Matsumoto, Yujiro Ogawa and Shinji Takarada

9:25-9:50 Ian Lambert (IUGS Secretary General) and Roland Oberhaensli (IUGS)

Catastrophic earthquakes and tsunami: Towards more effective risk reduction

9:50-10:15 Akira Ishiwatari (Tohoku Univ.)

Response of the damaged scientists to the Tohoku earthquake-tsunami catastrophe 10:15-10:40 Kuniyoshi Takeuchi (ICHARM, PWRI)

Geo-sciences for post-2015 challenges of disaster risk reduction

11:00-10:25 John Eichelberger (Alaska Univ., G-EVER Consortium Vice-President)

Some successes and failures in mitigating disaster risk from volcanic eruptions

11:25-11:50 Chris Newhall (Earth Observatory of Singapore)

Scientific and social challenges of forecasting a VEI ≥7 eruption

11:50 -12:15 Shinji Takarada (Geological Survey of Japan, AIST)

Global earthquake and volcanic eruption risk management (G-EVER) and the next-generation volcanic hazard assessment system

12:15-14:00 [Lunch] Poster Session Core Time

#### Session 2: Landslides and seismic hazards

Chair: James Goff and Yasuto Kuwahara

14:00-14:25 Peter Bobrowski (Simon Fraser Univ.)

From landslides to civil unrest: the implications of subduction zone earthquakes

14:25-14:50 Kiiciro Kawamura (Yamaguchi University)

Submarine landslides and marine geohazards

14:50-15:15 Masahiro Chigira & T. Kamai (Kyoto Univ.)

Landslides in tectonically active countries

15:15-15:40 Cheng-Horn Lin (Academia Sinica)

Landslide detection by broadband seismic network

15:40-16:05 Dong Shuwen (Chinese Academy of Geological Sciences)

Preliminary study on the seismotectonics of the 2013 Lushan Ms7.0 earthquake, West Sichuan, China

16:05-16:30 Ruizhi Wen (China Earthquake Administration)

Strong motion observation in April 20, 2013 Lushan, China, Earthquake and its damage implication

16:50-17:15 Pilar Villamor (GNS Science)

GEM-Faulted Earth: Towards a global active fault database

17:15-17:40 Yuzo Ishikawa (Geological Survey of Japan, AIST)

Proposals to revise ISC-GEM earthquake catalogue

17:40-18:05 Nguyen Hong Phuong (VAST)

Scenario-based tsunami hazard assessment for the coast of Vietnam from the Manila Trench source

18:05-18:30 Ken Xiansheng Hao and Hiroyuki Fujiwara (NIED)

Toward harmonization of seismic hazard assessment in the East Asia region

## Oct. 20 (Sun)

# Session 3: Volcanic activities, 2011 Tohoku-oki earthquake and subduction tectonics

Chair: John Eichelberger, Ronald Harris and Akira Takada

9:00-9:25 <u>Setsuya Nakada</u> (ERI, Univ.of Tokyo)

Complexity of the Shinmoe-dake eruption in 2011

9:25-9:50 Ma. Antonia V. Bornas (PHIVOLCS)

1911? 1754? BBS? 5.6ky? Hazards evaluation, monitoring and preparedness for the range of worst-case scenario eruptions of Taal Volcano, Philippines

9:50-10:15 Toru Matsuzawa (Tohoku Univ.)

What occurred in the Japan trench region before and after the Tohoku-oki earthquake?: Seismological aspects

10:15-10:40 Yuichiro Tanioka and Aditya Gusman (Hokkaido Univ.)

Tsunami generation mechanism due to the 2011 Tohoku-oki earthquake and a new method for the real-time tsunami inundation prediction

11:00-11:25 Mark Cloos (Univ. Texas, Austin)

Subduction zone tectonics: Subduction accretion versus erosion and the nature of the plate interface

11:25-11:50 <u>Takuya Nishimura</u> (Kyoto Univ.)

Crustal deformation of northeastern Japan clarified by geodetic observation over the past century

11:50-12:15 <u>Yasutaka Ikeda</u> (Univ. Tokyo) Strain buildup and release in the Northeast Japan orogeny over geologic and geodetic time scales with implications for gigantic subduction earthquakes

## Session 4: 2011 Tohoku-oki earthquake and tsunamis

Chair: Pilar Villamor, Masahiro Chigira and Yuzo Ishikawa

13:30-13:55 <u>Daisuke Sugawara</u>, Tomoyuki Takahashi and Fumihiko Imamura (Tohoku Univ.) Sediment transport by the 2011 Tohoku-oki tsunami at Sendai Plain: implications from numerical simulation

13:55-14:20 Kazuhisa Goto (Tohoku Univ.)

Tsunami deposits of Jogan and Tohoku-oki earthquakes and their historical implication

14:20-14:45 <u>James Goff</u> (Univ. NSW)

Tsunamis and tsunami deposits: Looking beyond the sand

15:05-15:30 Masataka Ando (Academia Sinica)

Did earthquake science reduce causalities of the Mw 9.0 Tohoku-oki earthquake?

15:30-15:55 Phil Cummins (ANU)

Implications of the 2011 Tohoku Earthquake for other subduction zones elsewhere

15:55-16:20 <u>Ronald Harris</u>, John Major and Yung-Chun Liu (Brigham Young University)

Who's next? History of tsunami disasters in Indonesia

16:20-16:45 Yildirim Dilek (Miami University)

Geopolitics and earth's future: Natural disasters and related geoscientific research

17:00-18:25 Panel Discussion

Chair: Chris Newhall, Yildirim Dilek, Yujiro Ogawa and Shinji Takarada)

18:25-18:30 Hirokazu Kato (AIST Fellow, Former Director General, GSJ, AIST)

## IUGS' Pardee Keynote Symposium at GSA Denver

The IUGS Secretary General, Ian Lambert, has convened a Pardee Keynote Symposium

(P.12) for the GSA Annual Meeting in Denver, 29 October 2013. This will feature 9 presentations by international experts on RESOURCING FUTURE GENERATIONS - the topic of IUGS' proposed new initiative. The papers are as follows:

Session 1. Chair: Edmund Nickless

<b>Presenting Author</b>	Title
Ian Lambert	RESOURCING FUTURE GENERATIONS: THE
	CHALLENGES
Larry Meinert	TRACKING RESOURCES AND ESTIMATING FUTURE
	SUPPLIES
Damien Giurco	RESOURCES AND SUPPLY-DEMAND OVER THE VERY
	LONG TERM
Anjian Wang	ANALYSIS OF CHINESE AND GLOBAL SUPPLY AND
	DEMAND FOR KEY MINERALS IN THE COMING 20
	YEARS
Marcio Godoy	RESOURCING FUTURE GENERATIONS: AN INDUSTRY
	PERSPECTIVE

Session 2. Chair Pat Leahy

Murray Hitzman	MINERAL DISCOVERY IN KNOWN AND AS-YET-
	UNKNOWN MINERAL SYSTEMS
Neil Willams	MINERAL EXPLORATION UNDER DEEP COVER
Mxolisi Kota	THE CHALLENGES FOR RESOURCING FUTURE GENERATIONS FROM AN AFRICAN PERSPECTIVE
Manfred Strecker	GEOGOVERNANCE - PREPARING FOR THE UNPREDICTABLE
Chair: John Ludden	PANEL DISCUSSION AND CLOSING REMARKS

A White Paper on Resourcing Future Generations is to be released for public comment in conjunction with the Pardee Keynote Symposium.

## **IUGS' Executive meeting, 2014**

Preparations have begun for the IUGS' 67<sup>th</sup> Executive Committee (EC) meeting, to be held in Goa, India, from 8-10 February 2014.

#### NEWS FROM THE REST OF THE WORLD

Africa: Report on the Third IGCP/SIDA/UNESCO/MUT 606 Workshop, Yaounde, Cameroon, 25 - 29 June, 2013.

In Sub-Saharan Africa, techniques in mitigation of mining impacts and rehabilitation of mined out lands have significantly improved since the beginning of the 1990's, largely

due to the recognition of national legislation processes, general technological advancement, and the efforts of Sub-Saharan Governments in supporting the mining industry.

The theme of the 'Third Workshop' of the IGCP/SIDA/UNESCO/MUT Project 606 Series was: "Addressing Environmental Health Impacts of Major and Abandoned Mines in Sub-Saharan Africa Through Improvements in Mitigation and Rehabilitation Techniques".

The main purpose of the Workshop was to show how advances in technology combined with sound environmental management practices can contribute towards minimization of on- and off-site environmental impacts, and hence preserve the health of agro-ecosystems and the surrounding communities who are dependent on these systems.

The Meeting was hosted in Yaounde, Capital City of the Republic of Cameroon, by the Institute for Geological and Mining Research (IRGM), under the auspices of Mangosuthu University of Technology of South Africa, and UNESCO Nairobi Office of Kenya. A total of about 52 delegates from 10 Sub-Sahara African countries took part. The proceedings which ran from 25 - 29 June 2013, incorporated a 2-day field visit to alluvial gold outfits in the outskirts of Bertoua, a bustling mining Town in East Cameroon from 27 to 29 June, a 'Business Meeting' and 'Closing Workshop Session' back in Yaounde in the evening of 29 June. All workshop sessions were held at the Merina Hotel in Yaounde, where majority of the workshop delegates were also accommodated.

In conclusion, it could be said that the Workshop achieved the main objectives set out originally. It was highly interactive and the debates were lively. The need for further collaborative and interdisciplinary studies on the relationships between mining and environmental health in the Sub-Saharan Region was clearly brought out. The intensity of research on improvement in mitigation and rehabilitation strategies by large mining concerns augurs well for the environmental health of miners and the surrounding mining communities. Report by Prof T.C. Davies, South Africa.

## RECENT INFORMATION ON PUBLICATIONS

# 1) Newsletters & E-Journals:

- The International Council for Science (ICSU) Newsletter can be accessed through: http://www.icsu.org/news-centre/insight
- The International Union of Geodesy and Geophysics (IUGG) E-Journal can be accessed through: <a href="http://www.iugg.org/publications/ejournals/">http://www.iugg.org/publications/ejournals/</a>
- The Société Algérienne de Géophysique (SAGA) Newsletter can be accessed through: <a href="www.sag.dz">www.sag.dz</a>
- The International Geosphere-Biosphere Programme (IGBP) E-bulletin can be accessed through: http://www.igbp.net/
- The Mineral Research & Exploration Bulletin (Turkey) can be accessed through: http://www.mta.gov.tr/v2.0/eng/all-bulletins.php?id=145 down
- The UN SPIDER e-bulletin since January 2013 can be accessed through: http://www.un-spider.org/about/updates/un-spider-updates-january-2013
- The European Federation of Geologists GeoNews can be accessed through

#### http://www.eurogeologists.de/

• The European Association for the Conservation of the Geological Heritage (ProGeo) Newsletter can be accessed through <a href="http://www.progeo.se/">http://www.progeo.se/</a>

## 2) Magazines

• EARTH magazine online can be accessed through: <a href="http://www.earthmagazine.org/">http://www.earthmagazine.org/</a>

## FORTHCOMING EVENTS

# The 35<sup>th</sup> International Geological Congress – Cape Town, South Africa 27 August to 4 September 2016: update

The International Geological Congress (IGC) is the principal event of the International Union of Geological Sciences (IUGS) and is held every four years in a different country. South Africa won the bid for this event in 2008 and formed a not-for-profit company, the "35<sup>th</sup> IGC Foundation" to handle all logistical aspects for the Congress and appointed a Professional Congress Organizer (PCO) to assist with the preparations.

The IGC was held previously on the African Continent in South Africa in 1929 and in Algeria in 1952. The Cape Town event will be presented as an African, rather than a South African event, therefore we would like to call all African countries to participate.

The 35<sup>th</sup> IGC will feature the Geoheritage of Africa as a lasting legacy of this event and a special publication will be dedicated to this theme. Genevieve Pearson is our contact person on the Local Organizing Committee (LOC) for Geoheritage. Please contact Genevieve at <a href="mailto:gpearson@phoenixgeoconsulting.com">gpearson@phoenixgeoconsulting.com</a> for more information.

Besides, all "hot" topics in the Geosciences –such as renewable energy, climate change, energy resources, shale gas, planetary geology, mine rehabilitation, sustainable mining, etc. will be covered as well as all the "traditional" geoscientific topics. However, in order to prepare a coherent and a successful program we rely on you to provide us with input and ideas for additional topics. Please feel free to contact us with any subject you would like to consider for a scientific session or a workshop during the IGC 2016. We welcome all ideas and contributions and we thank you in advance for your input. The relevant contact in this regard is our Scientific Program Chair, Jay Barton, who you can contact at jay.barton@telkomsa.net.

We are also planning spectacular field trips covering many of the geological superlatives on the African continent and a full itinerary of these trips will be published on the IGC 2016 website shortly. The Chair of the Field Trip Committee, is Chris Hatton, who can be contacted at <a href="mailto:chatton@geoscience.org.za">chatton@geoscience.org.za</a> for more information.

The LOC is also planning to accommodate a large number of geoscientists from African countries and other developing countries through our Geohost programme, which will sponsor students and young geoscientists to attend the 35<sup>th</sup> IGC. This programme is strongly depending on sponsorship. If you would be interested in helping us to achieve this vision, please contact Jeanette McGill at jeannette.mcgill@gmail.com, who is in charge of this portfolio on the LOC. No event of this magnitude can be successful without sponsorship. If you are interested in sponsoring the 35<sup>th</sup> IGC, please contact Mike Wuth, who is in charge of the Sponsorship portfolio at: mikew@xbt.co.za). If you are

interested to exhibit at the 35<sup>th</sup> IGC, please contact the PCO's Lesley Ferreira at lesley@cebisaconferences.co.za

We look forward to welcoming you to Cape Town in 2016, which was recently listed as one of the ten most popular tourist destinations on the globe. All the while its world-famous Table Mountain – one of the seven natural wonders of the world – forms an impressive backdrop to this vibrant city.

It's truly time for Africa! Danie Barnardo, Secretary-General: 35<sup>th</sup> IGC, barnardo@geoscience.org.za, http://www.35igc.org

## Other forthcoming events

All forthcoming events are listed on the IUGS website (http://www.iugs.org) and will remain published until the event concludes. To see the IUGS listing of forthcoming geoscience meetings, conferences and workshops, go to the Calendar section of the IUGS website at:

http://iugs.org/index.php?page=calendar&phpMyAdmin=2c9f06db78f0953a55b10dcfdc5907f6

The IUGS website lists more "geo" related events than any other website devoted to such information. Analysis of the IUGS website statistics indicates that the "IUGS Calendar" section is one of the most frequently visited elements of our website with regular hits from over 160 countries. The IUGS is pleased to continue this service to help promote all "geo" related events.

Please email your meeting/conferences posting requests/information directly to the IUGS Secretariat at <a href="mailto:iugs.beijing@gmail.com">iugs.beijing@gmail.com</a>, or to the IUGS Webmaster at: <a href="mailto:pbobrows@NRCan.gc.ca">pbobrows@NRCan.gc.ca</a> to be listed on the website of the IUGS.

# NEED TO CONTACT A GEOSCIENCE ORGANIZATION AROUND THE WORLD?

The Directory of Geoscience Organizations of the World produced by the Geological Survey of Japan includes web links to national geological surveys as well as state and provincial geological surveys at: <a href="http://www.gsj.jp/information/gsj-link/dir/index.html">http://www.gsj.jp/information/gsj-link/dir/index.html</a>
The geology.com website with news and information about geology and earth science also lists geological organizations and agencies: <a href="http://geology.com/groups.html">http://geology.com/groups.html</a>

With best regards

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